



SEQUENCE LISTING

<110> Abbott Laboratories
 Hackett, John R., Jr.
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 Hickman, Robert K.
 Devare, Sushil G.

<120> NOVEL ANTIGEN CONSTRUCTS USEFUL IN THE
 DETECTION AND DIFFERENTIATION OF ANTIBODIES TO HIV

<130> 6165.US.O1

<140> US 08/911,824

<141> 1997-08-15

<160> 121

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 19

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Sequencing Primer 43285

<400> 1

gagatcttca ggggtatcc

19

<210> 2

<211> 20

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Sequencing Primer 43461

<400> 2

ggatcatcgg ttcattcacc

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<210> 3

<211> 114

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Synthetic oligonucleotide (Osyn-A) for PCR

<400> 3

catgatcggg ggtgacatga aagacatctg gcgtaacgaa ctgttcaaata acaaagttgt
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114

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<211> 111
<212> DNA
<213> Human Immunodeficiency Virus

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<400> 4
gcaggttcca ctatgggtgc tgcagctacc gctctgaccg tacagacca ctctgttata 60
aaaggtatcg tacagcagca cgacaacctg ctgcgtgcaa tccaggcaca g 111

<210> 5
<211> 110
<212> DNA
<213> Human Immunodeficiency Virus

<220>
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<400> 5
agctgctggt tctggatcag gggttccagt gccagcagac gagcacgcag ctgacggata 60
ccccatacag acagacgcag cagttcctgc tgtgcctgga ttgcacgcag 110

<210> 6
<211> 111
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Synthetic oligonucleotide (Osyn-E) for PCR

<400> 6
ctgatccaga accagcagct gctgaacctg tggggctgca aaggctgtct gatctgctac 60
acctccgtta aatggaacga aacctggcgt aacaccacca acatcaacca g 111

<210> 7
<211> 117
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Synthetic oligonucleotide (Osyn-F) for PCR

<400> 7
ctgaacctga gctttctgga tttcttcgta gatggtggaa gaaacgttgt cgatctgctg 60
gtccattcc tgccaggtca gggtaccca gatctggttg atgttggtgg tgttacg 117

<210> 8
<211> 101
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Synthetic oligonucleotide (Osyn-G) for PCR

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<400> 8
 tccagaaagc tcaggttcag caggaacaga acgaaaaaaa actgctggaa ctggacgaat 60
 gggcttctct gtggaactgg ctggacatca ccaaattggct g 101

<210> 9
 <211> 114
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (Osyn-H) for PCR

<400> 9
 accttcaccg gtacgaccgc gagtttcagc ttcagactgc tgacgggtcg ggatctgcag 60
 ggacagcggc tggtagccct gacggatgtt acgcagccat ttggtgatgt ccag 114

<210> 10
 <211> 107
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (Osyn-I) for PCR

<400> 10
 cgggtcgtac cgggtgaagg ggtggtgacg aaggccgtcc gcgtctgac ccgtctccgc 60
 agggtttctt gccgctgctg tacaccgacc tgcgtaccat catcctg 107

<210> 11
 <211> 31
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> HIV-1 Group O PCR Primer Osyn-5' (outside)

<400> 11
 ctacaagaat tccatgatcg gtggtgacat g 31

<210> 12
 <211> 109
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (Osyn-K) for PCR

<400> 12
 gtctgtggat tctgggtcag aaaatcatcg acgcttgccg tatctgcgct gctggttatcc 60
 actactggct gcaggaactg cagaaatccg ctacctccct gatcgacac 109

<210> 13
 <211> 114
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>

<223> Synthetic oligonucleotide (Osyn-L) for PCR

<400> 13
gcgaacacga cgcgggatgt tcaggatacc acgacccaga cgctggatac cacggatgat 60
gtcgtcagtc cagtttagcaa ctgcaacagc gaaggtgtcg atcagggagg tagc 114

<210> 14
<211> 60
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O PCR Primer Osyn-M (antisense)

<400> 14
atagtaggat cctattacag cagagagcgt tcgaagccct ggcgaacacg acgcgggatg 60

<210> 15
<211> 43
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O PCR Primer Osyn-O3' (antisense)

<400> 15
atagtaggat cctattattc accggtacga cccggagttt cag 43

<210> 16
<211> 38
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O PCR Primer Osyn-P3' (antisense)

<400> 16
atagtaggat cctattacag ccatttggtg atgtccag 38

<210> 17
<211> 106
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Synthetic oligonucleotide (Osyn-B) for PCR

<400> 17
gcacccatag tggaacctgc tgcagacaga acgcccagga acagcatacc cagacctaca 60
gcacgttttt cacggtgggt gccagtaccg ataaccggac gagcga 106

<210> 18
<211> 108
<212> DNA
<213> Human Immunodeficiency Virus

<220>

<223> Synthetic oligonucleotide (Osyn-J) for PCR

<400> 18
ctgacccaga atccacagac ccagacgcag gtgagagata acagtctgag taccagagat 60
caggttagac agcaggtggt aggaccacag gatgatggta cgcaggtc 108

<210> 19
<211> 26
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer CKS 176.1

<400> 19
gcagcttcgt gttctgtggt acggcg 26

<210> 20
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer CKS3583

<400> 20
cgtaacggta cgacactcc 19

<210> 21
<211> 26
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer IM-6F (Forward)

<400> 21
ccgctacctc cctgatcgac accttc 26

<210> 22
<211> 26
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer IM-6R (Reverse)

<400> 22
gaaggtgtcg atcagggagg tagcgg 26

<210> 23
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 4lsy-4

<400> 23
 gatgtccagc cagttccac 19

 <210> 24
 <211> 64
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Synthetic oligonucleotide (Osyn-5' repair) for PCR

 <400> 24
 ctacaagaat tccatgatcg gtggtgacat gaaagacatc tggcgtaacg aactgttcaa 60
 atac 64

 <210> 25
 <211> 34
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> PCR Primer Osyn-5'CKS

 <400> 25
 ctacaagaat tctatcggtg gtgacatgaa agac 34

 <210> 26
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> PCR Primer I-PCR

 <400> 26
 cgggtcgtac cgggtgaaggt 20

 <210> 27
 <211> 23
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> PCR Primer M-PCR

 <400> 27
 atagtaggat cctattacag cag 23

 <210> 28
 <211> 19
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer pTB-S8

<400> 28
 gccggaagcg agaagaatc 19

 <210> 29
 <211> 19
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer 4lsy-1B

 <400> 29
 tatcgtagcag cagcaggac 19

 <210> 30
 <211> 21
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer CKS-1

 <400> 30
 cccattaatg tgagttagct c 21

 <210> 31
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer CKS-2

 <400> 31
 cctgacgaat gattgtcgca 20

 <210> 32
 <211> 19
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer CKS-3

 <400> 32
 attcagcgac gacacggtg 19

 <210> 33
 <211> 18
 <212> DNA
 <213> Human Immunodeficiency Virus

 <220>
 <223> Sequencing Primer CKS-4

 <400> 33
 gstatccacac ctgtgccca 18

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<210> 34
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer 41sy-2B

<400> 34
agagtgggtc tgtacggtc 19

<210> 35
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer 41sy-3B

<400> 35
aatgggcttc tctgtggaac 20

<210> 36
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer 41sy-5C

<400> 36
ctgtctaacc tgatctctgg 20

<210> 37
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing Primer 41sy-6B

<400> 37
acgcaggtga gagataacag 20

<210> 38
<211> 22
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer pKRREcoR1 (Forward)

<400> 38
gtgatacgaa acgaagcatt gg 22

<210> 39

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<211> 21
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer pKRRBamHI (Reverse)

<400> 39
gcgatatagg cgccagcaac c                                21

<210> 40
<211> 21
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 4lsy-1C

<400> 40
ctctgttatc aaaggtatcg t                                21

<210> 41
<211> 18
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 4lsy-2

<400> 41
agcagacgag cacgcagc                                    18

<210> 42
<211> 18
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 4lsy-3

<400> 42
ttcagcagga acagaacg                                    18

<210> 43
<211> 18
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 4lsy-5B

<400> 43
tccgcgtctg atcccgtc                                    18

<210> 44
<211> 17
<212> DNA

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<213> Human Immunodeficiency Virus

<220>

<223> PCR Primer 41sy-1

<400> 44

ccaggcacag caggaac 17

<210> 45

<211> 20

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Sequencing Primer 56759

<400> 45

acactataga atactcaagc 20

<210> 46

<211> 20

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Sequencing Primer 55848

<400> 46

taatacgact cactataggg 20

<210> 47

<211> 741

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-9PL

<400> 47

atgatcggtg	gtgacatgaa	agacatctgg	cgtaacgaac	tgttcaaata	caaagttggt	60
cgtgttaaac	cgttctctgt	tgctccgacc	ccgatcgctc	gtccggttat	cggtactggc	120
accacacgtg	aaaaacgtgc	tgtaggtctg	ggtatgctgt	tcctgggcgt	tctgtctgca	180
gcaggttcca	ctatgggtgc	tgacagctacc	gctctgaccg	tacagaccca	ctctgttata	240
aaaggtatcg	tacagcagca	ggacaacctg	ctgcgtgcaa	tccaggcaca	gcaggaaactg	300
ctgcgtctgt	ctgtatgggg	tatccgtcag	ctgcgtgctc	gtctgctggc	actggaaacc	360
ctgatccaga	accagcagct	gctgaacctg	tggggctgca	aaggtcgtct	gatctgctac	420
acctccgtta	aatggaacga	aacctggcgt	aacaccacca	acatcaacca	gatctgggggt	480
aacctgacct	ggcaggaatg	ggaccagcag	atcgacaacg	tttcttccac	catctacgaa	540
gaaatccaga	aagctcaggt	tcagcaggaa	cagaacgaaa	aaaaactgct	ggaactggac	600
gaatgggctt	ctctgtggaa	ctggctggac	atcaccaaat	ggctgcgtaa	catccgtcag	660
ggctaccagc	cgctgtccct	gcagatcccc	accgctcagc	agtctgaagc	tgaaactccg	720
ggtcgtaccg	gtgaataata	g				741

<210> 48

<211> 245

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-9PL

<400> 48

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Met Ile Gly Gly Asp Met Lys Asp Ile Trp Arg Asn Glu Leu Phe Lys
 1           5           10           15
Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val Ala Pro Thr Pro Ile
      20           25           30
Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg Glu Lys Arg Ala Val
      35           40           45
Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser Ala Ala Gly Ser Thr
      50           55           60
Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln Thr His Ser Val Ile
      65           70           75           80
Lys Gly Ile Val Gln Gln Asp Asn Leu Leu Arg Ala Ile Gln Ala
      85           90           95
Gln Gln Glu Leu Leu Arg Leu Ser Val Trp Gly Ile Arg Gln Leu Arg
      100          105          110
Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu
      115          120          125
Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys
      130          135          140
Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile Asn Gln Ile Trp Gly
      145          150          155          160
Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile Asp Asn Val Ser Ser
      165          170          175
Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val Gln Gln Glu Gln Asn
      180          185          190
Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala Ser Leu Trp Asn Trp
      195          200          205
Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg Gln Gly Tyr Gln Pro
      210          215          220
Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser Glu Ala Glu Thr Pro
      225          230          235          240
Gly Arg Thr Gly Glu
      245

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<210> 49

<211> 1476

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-9CKS

<400> 49

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ggtgccgagc gcatcatcgt ggcaaccgat catgaggatg ttgccgcgc cgttgaagcc      180
gctggcggtg aagtatgtat gacgcgcgc gatcatcagt caggaacaga acgtctggcg      240
gaagttgtcg aaaaatgcgc attcagcgac gacacggtga tcgttaatgt gcagggtgat      300
gaaccgatga tccctgcgac aatcattcgt caggttgctg ataacctcgc tcagcgtcag      360
gtgggtatga ggtctctggc ggtgccaatc cacaatgcgg aagaagcggt taaccggaat      420
gcggtgaaag tggttctcga cgctgaaggg tatgcactgt acttctctcg cgccaccatt      480

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ccttggggtc gtgatcggtt tgcagaaggc cttgaaaccg ttggcgataa cttcctgcgt      540
catccttggt tttatggcta ccgtgcaggc tttatccgtc gttacgtcaa ctggcagcca      600
agtcctgttag aacacatcga aatgttagag cagcttcgtg ttctgtggta cggcgaaaaa      660
atccatgttg ctggtgctca ggaagttcct ggcacagggt tggatacccc tgaagatctc      720
gacccgtcga cgaattctat cggtggtgac atgaaagaca tctggcgtaa cgaactgttc      780
aaatacaaag ttgttcgtgt taaaccgttc tctgttgctc cgaccccgat cgctcgcccg      840
gttatcggtg ctggcaccca ccgtgaaaaa cgtgctgtag gtctgggtat gctgttcctg      900
ggcgttctgt ctgcagcagg ttccactatg ggtgctgcag ctaccgctct gaccgtacag      960
accactctg ttatcaaagg tatcgtagag cagcaggaca acctgctgcg tgcaatccag     1020
gcacagcagg aactgctgcg tctgtctgta tggggtatcc gtcagctgcg tgctcgctctg     1080
ctggcactgg aaacctgat ccagaaccag cagctgctga acctgtgggg ctgcaaaggt     1140
cgtctgatct gctacacctc cgttaaatgg aacgaaacct ggcgtaaacac caccaacatc     1200
aaccagatct ggggtaacct gacctggcag gaatgggacc agcagatcga caacgtttct     1260
tccaccatct acgaagaaat ccagaaagct caggttcagc aggaacagaa cgaaaaaaa     1320
ctgctggaac tggacgaatg ggcttctctg tggaactggc tggacatcac caaatggctg     1380
cgtaacatcc gtcagggtga ccagccgctg tcctgcaga tcccgaccgg tcagcagtct     1440
gaagctgaaa ctccgggtcg taccgggtgaa taatag                                1476

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<210> 50

<211> 490

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-9CKS

<400> 50

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Pro Gly Lys Pro Leu Val Asp Ile Asn Gly Lys Pro Met Ile Val His
      20              25              30
Val Leu Glu Arg Ala Arg Glu Ser Gly Ala Glu Arg Ile Ile Val Ala
      35              40              45
Thr Asp His Glu Asp Val Ala Arg Ala Val Glu Ala Ala Gly Gly Glu
      50              55              60
Val Cys Met Thr Arg Ala Asp His Gln Ser Gly Thr Glu Arg Leu Ala
      65              70              75              80
Glu Val Val Glu Lys Cys Ala Phe Ser Asp Asp Thr Val Ile Val Asn
      85              90              95
Val Gln Gly Asp Glu Pro Met Ile Pro Ala Thr Ile Ile Arg Gln Val
      100             105             110
Ala Asp Asn Leu Ala Gln Arg Gln Val Gly Met Thr Thr Leu Ala Val
      115             120             125
Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val
      130             135             140
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile
      145             150             155             160
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp
      165             170             175
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile
      180             185             190
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met
      195             200             205
Leu Glu Gln Leu Arg Val Leu Trp Tyr Gly Glu Lys Ile His Val Ala
      210             215             220
Val Ala Gln Glu Val Pro Gly Thr Gly Val Asp Thr Pro Glu Asp Leu
      225             230             235             240

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Asp Pro Ser Thr Asn Ser Ile Gly Gly Asp Met Lys Asp Ile Trp Arg
 245 250 255
 Asn Glu Leu Phe Lys Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val
 260 265 270
 Ala Pro Thr Pro Ile Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg
 275 280 285
 Glu Lys Arg Ala Val Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser
 290 295 300
 Ala Ala Gly Ser Thr Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln
 305 310 315 320
 Thr His Ser Val Ile Lys Gly Ile Val Gln Gln Gln Asp Asn Leu Leu
 325 330 335
 Arg Ala Ile Gln Ala Gln Gln Glu Leu Leu Arg Leu Ser Val Trp Gly
 340 345 350
 Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln
 355 360 365
 Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys
 370 375 380
 Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile
 385 390 395 400
 Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile
 405 410 415
 Asp Asn Val Ser Ser Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val
 420 425 430
 Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala
 435 440 445
 Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg
 450 455 460
 Gln Gly Tyr Gln Pro Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser
 465 470 475 480
 Glu Ala Glu Thr Pro Gly Arg Thr Gly Glu
 485 490

<210> 51
 <211> 1125
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Nucleotide sequence of the coding region of
 pGO-11PL

<400> 51
 atgatcgggtg gtgacatgaa agacatctgg cgtaacgaac tgttcaaata caaagttggt 60
 cgtgttaaac cgttctctgt tgctccgacc ccgategctc gtccgggttat cgggtactggc 120
 acccaccgtg aaaaacgtgc tgtaggctctg ggtatgctgt tcctgggctg tctgtctgca 180
 gcaggttcca ctatgggtgc tgcagctacc gctctgaccg tacagaccca ctctgtttatc 240
 aaaggtatcg tacagcagca ggacaacctg ctgcgtgcaa tccaggcaca gcaggaaactg 300
 ctgcgtctgt ctgtatgggg tatccgtcag ctgcgtgctc gtctgctggc actggaaacc 360
 ctgatccaga accagcagct gctgaacctg tggggctgca aaggctcgtct gatctgctac 420
 acctccgtta aatggaacga aacctggcgt aacaccacca acatcaacca gatctgggggt 480
 aacctgacct ggcaggaatg ggaccagcag atcgacaacg tttcttccac catctacgaa 540
 gaaatccaga aagctcaggt tcagcaggaa cagaacgaaa aaaaactgct ggaactggac 600
 gaatgggctt ctctgtggaa ctggctggac atcaccaaat ggctgcgtaa catccgtcag 660
 ggctaccagg cgctgtccct gcagatcccg acccgctcagc agtctgaagc tgaaactccg 720
 ggctcgtaccg gtgaagggtg tggtgaacgaa ggccgtccgc gtctgatccc gtctccgacg 780
 ggtttctctgc cgtctgtgta caccgacctg cgtaccatca tcctgtgggc ctaccacctg 840

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ctgtctaacc tgatctctgg tactcagact gttatctctc acctgcgtct gggctctgtgg      900
attctgggtc agaaaatcat cgacgcttgc cgtatctgcg ctgctgttat ccactactgg      960
ctgcaggaac tgcagaaatc cgctacctcc ctgacgcaca ccttcgctgt tgcagttgct     1020
aactggactg acgacatcat cctgggtatc cagcgtctgg gtcgtggtat cctgaacatc     1080
ccgcgtcgtg ttcgccaggg cttcgaacgc tctctgctgt aatag                        1125

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<210> 52
<211> 373
<212> PRT
<213> Human Immunodeficiency Virus

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<220>
<223> Encodes recombinant protein pGO-11PL

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<400> 52
Met Ile Gly Gly Asp Met Lys Asp Ile Trp Arg Asn Glu Leu Phe Lys
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Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val Ala Pro Thr Pro Ile
          20           25           30
Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg Glu Lys Arg Ala Val
          35           40           45
Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser Ala Ala Gly Ser Thr
          50           55           60
Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln Thr His Ser Val Ile
65           70           75           80
Lys Gly Ile Val Gln Gln Asp Asn Leu Leu Arg Ala Ile Gln Ala
          85           90           95
Gln Gln Glu Leu Leu Arg Leu Ser Val Trp Gly Ile Arg Gln Leu Arg
          100          105          110
Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu
          115          120          125
Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys
          130          135          140
Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile Asn Gln Ile Trp Gly
145          150          155          160
Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile Asp Asn Val Ser Ser
          165          170          175
Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val Gln Gln Glu Gln Asn
          180          185          190
Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala Ser Leu Trp Asn Trp
          195          200          205
Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg Gln Gly Tyr Gln Pro
          210          215          220
Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser Glu Ala Glu Thr Pro
225          230          235          240
Gly Arg Thr Gly Glu Gly Gly Gly Asp Glu Gly Arg Pro Arg Leu Ile
          245          250          255
Pro Ser Pro Gln Gly Phe Leu Pro Leu Leu Tyr Thr Asp Leu Arg Thr
          260          265          270
Ile Ile Leu Trp Ser Tyr His Leu Leu Ser Asn Leu Ile Ser Gly Thr
          275          280          285
Gln Thr Val Ile Ser His Leu Arg Leu Gly Leu Trp Ile Leu Gly Gln
          290          295          300
Lys Ile Ile Asp Ala Cys Arg Ile Cys Ala Ala Val Ile His Tyr Trp
305          310          315          320
Leu Gln Glu Leu Gln Lys Ser Ala Thr Ser Leu Ile Asp Thr Phe Ala
          325          330          335

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Val Ala Val Ala Asn Trp Thr Asp Asp Ile Ile Leu Gly Ile Gln Arg
 340 345 350
 Leu Gly Arg Gly Ile Leu Asn Ile Pro Arg Arg Val Arg Gln Gly Phe
 355 360 365
 Glu Arg Ser Leu Leu
 370

<210> 53
 <211> 1860
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Nucleotide sequence of the coding region of
 pGO-11CKS

<400> 53
 atgagttttg tggtcattat tcccgcgcgc tacgcgtcga cgcgtctgcc cggtaaacca 60
 ttggttgata ttaacggcaa acccatgatt gttcatgttc ttgaacgcgc gcgtgaatca 120
 ggtgccgagc gcatcatcgt ggcaaccgat catgaggatg ttgccgcgc gcgtgaagcc 180
 gctggcgggtg aagtatgtat gacgcgcgcc gatcatcagt caggaacaga acgtctggcg 240
 gaagttgtcg aaaaatgcgc attcagcgac gacacggtag tcgttaatgt gcagggtgat 300
 gaaccgatga tccctgcgac aatcattcgt caggttgctg ataacctcg tcagcgtcag 360
 gtgggtatga cgactctggc ggtgccaatc cacaatgcgc aagaagcgtt taaccggaat 420
 gcggtgaaag tggttctcga cgctgaaggg tatgcactgt acttctctcg cgccaccatt 480
 ccttgggatac gtgatcggtt tgcagaaggc cttgaaaccg ttggcgataa ctctctgcgt 540
 catcttggtta tttatggcta ccgtgcaggc tttatccgtc gttacgtcaa ctggcagcca 600
 agtccgtag aacacatcga aatgttagag cagcttcgtg ttctgtggta cggcgaaaaa 660
 atccatgttg ctggtgctca ggaagttcct ggcacagggtg tggatacccc tgaagatctc 720
 gaccgcgcga cgaattctat cgggtggtgac atgaaagaca tctggcgtaa cgaactgttc 780
 aaatacaaag ttgttcgtgt taaaccgttc tctgttgctc cgaccccgat cgctcgtccg 840
 gttatcggtta ctggcaccca ccgtgaaaaa cgtgctgtag gtctgggtat gctgttcctg 900
 ggcgttctgt ctgcagcagg ttccactatg ggtgctgcag ctaccgctct gaccgtacag 960
 acccactctg ttatcaaagg tatcgtacag cagcaggaca acctgctgcg tgcaatccag 1020
 gcacagcagg aactgctgcg tctgtctgta tggggtatcc gtcagctgcg tgctcgtctg 1080
 ctggcactgg aaacctgat ccagaaccag cagctgctga acctgtgggg ctgcaaaggt 1140
 cgtctgatct gtaacacctc cgttaaatgg aacgaaacct ggcgtaacac caccaacatc 1200
 aaccagatct ggggtaacct gacctggcag gaatgggacc agcagatcga caacgtttct 1260
 tccaccatct acgaagaaat ccagaaagct caggttcagc aggaacagaa cgaaaaaaa 1320
 ctgctggaac tggacgaatg ggcttctctg tggaaactggc tggacatcac caaatggctg 1380
 cgtaacatcc gtcagggtta ccagccgctg tccctgcaga tcccgaaccg tcagcagtct 1440
 gaagctgaaa ctccgggtcg taccgggtgaa ggtggtggtg acgaaggccg tccgcgtctg 1500
 atcccgtctc cgcagggttt cctgccgctg ctgtacaccg acctgcgtac catcatcctg 1560
 tggctctacc acctgctgtc taacctgata tctggtactc agactgttat ctctcacctg 1620
 cgtctgggtc tgtggattct gggtcagaaa atcatcgacg cttgccgtat ctgcgtgct 1680
 gttatccact actggctgca ggaactgcag aaatccgcta cctccctgat cgacaccttc 1740
 gctgttcgag ttgctaactg gactgacgac atcatcctgg gtatccagcg tctgggtcgt 1800
 ggtatcctga acatcccgcg tcgtgttcgc cagggcttcg aacgctctct gctgtaatag 1860

<210> 54
 <211> 618
 <212> PRT
 <213> Human Immunodeficiency Virus

<220>
 <223> Encodes recombinant protein pGO-11CKS

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      <400> 54
Met Ser Phe Val Val Ile Ile Pro Ala Arg Tyr Ala Ser Thr Arg Leu
 1          5          10          15
Pro Gly Lys Pro Leu Val Asp Ile Asn Gly Lys Pro Met Ile Val His
      20          25          30
Val Leu Glu Arg Ala Arg Glu Ser Gly Ala Glu Arg Ile Ile Val Ala
      35          40          45
Thr Asp His Glu Asp Val Ala Arg Ala Val Glu Ala Ala Gly Gly Glu
      50          55          60
Val Cys Met Thr Arg Ala Asp His Gln Ser Gly Thr Glu Arg Leu Ala
65          70          75          80
Glu Val Val Glu Lys Cys Ala Phe Ser Asp Asp Thr Val Ile Val Asn
      85          90          95
Val Gln Gly Asp Glu Pro Met Ile Pro Ala Thr Ile Ile Arg Gln Val
      100          105          110
Ala Asp Asn Leu Ala Gln Arg Gln Val Gly Met Thr Thr Leu Ala Val
      115          120          125
Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val
      130          135          140
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile
145          150          155          160
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp
      165          170          175
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile
      180          185          190
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met
      195          200          205
Leu Glu Gln Leu Arg Val Leu Trp Tyr Gly Glu Lys Ile His Val Ala
      210          215          220
Val Ala Gln Glu Val Pro Gly Thr Gly Val Asp Thr Pro Glu Asp Leu
225          230          235          240
Asp Pro Ser Thr Asn Ser Ile Gly Gly Asp Met Lys Asp Ile Trp Arg
      245          250          255
Asn Glu Leu Phe Lys Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val
      260          265          270
Ala Pro Thr Pro Ile Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg
      275          280          285
Glu Lys Arg Ala Val Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser
      290          295          300
Ala Ala Gly Ser Thr Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln
305          310          315          320
Thr His Ser Val Ile Lys Gly Ile Val Gln Gln Gln Asp Asn Leu Leu
      325          330          335
Arg Ala Ile Gln Ala Gln Gln Glu Leu Leu Arg Leu Ser Val Trp Gly
      340          345          350
Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln
      355          360          365
Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys
      370          375          380
Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile
385          390          395          400
Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile
      405          410          415
Asp Asn Val Ser Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val
      420          425          430
Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala
      435          440          445

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Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg
  450                      455                      460
Gln Gly Tyr Gln Pro Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser
465                      470                      475                      480
Glu Ala Glu Thr Pro Gly Arg Thr Gly Glu Gly Gly Gly Asp Glu Gly
                      485                      490                      495
Arg Pro Arg Leu Ile Pro Ser Pro Gln Gly Phe Leu Pro Leu Leu Tyr
                      500                      505                      510
Thr Asp Leu Arg Thr Ile Ile Leu Trp Ser Tyr His Leu Leu Ser Asn
                      515                      520                      525
Leu Ile Ser Gly Thr Gln Thr Val Ile Ser His Leu Arg Leu Gly Leu
                      530                      535                      540
Trp Ile Leu Gly Gln Lys Ile Ile Asp Ala Cys Arg Ile Cys Ala Ala
545                      550                      555                      560
Val Ile His Tyr Trp Leu Gln Glu Leu Gln Lys Ser Ala Thr Ser Leu
                      565                      570                      575
Ile Asp Thr Phe Ala Val Ala Val Ala Asn Trp Thr Asp Asp Ile Ile
                      580                      585                      590
Leu Gly Ile Gln Arg Leu Gly Arg Gly Ile Leu Asn Ile Pro Arg Arg
                      595                      600                      605
Val Arg Gln Gly Phe Glu Arg Ser Leu Leu
610                      615

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<210> 55
<211> 466
<212> PRT
<213> Human Immunodeficiency Virus

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<220>
<223> HIV-2 recombinant peptide (pHIV-210)

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<400> 55
Met Ser Phe Val Val Ile Ile Pro Ala Arg Tyr Ala Ser Thr Arg Leu
  1                      5                      10                      15
Pro Gly Lys Pro Leu Val Asp Ile Asn Gly Lys Pro Met Ile Val His
                      20                      25                      30
Val Leu Glu Arg Ala Arg Glu Ser Gly Ala Glu Arg Ile Ile Val Ala
                      35                      40                      45
Thr Asp His Glu Asp Val Ala Arg Ala Val Glu Ala Ala Gly Gly Glu
                      50                      55                      60
Val Cys Met Thr Arg Ala Asp His Gln Ser Gly Thr Glu Arg Leu Ala
65                      70                      75                      80
Glu Val Val Glu Lys Cys Ala Phe Ser Asp Asp Thr Val Ile Val Asn
                      85                      90                      95
Val Gln Gly Asp Glu Pro Met Ile Pro Ala Thr Ile Ile Arg Gln Val
                      100                     105                     110
Ala Asp Asn Leu Ala Gln Arg Gln Val Gly Met Thr Thr Leu Ala Val
                      115                     120                     125
Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val
                      130                     135                     140
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile
145                      150                      155                      160
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp
                      165                      170                      175
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile
                      180                     185                     190
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met

```

[illegible]

```
<210> 56
<211> 491
<212> PRT
<213> Human Immunodeficiency Virus
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<220>
<223> HIV-1 Group M recombinant peptide (pTB319)

<div> <div><400></div> <div>56</div> </div>															
Met	Ser	Phe	Val	Val	Ile	Ile	Pro	Ala	Arg	Tyr	Ala	Ser	Thr	Arg	Leu
1				5					10					15	
Pro	Gly	Lys	Pro	Leu	Val	Asp	Ile	Asn	Gly	Lys	Pro	Met	Ile	Val	His
			20					25					30		
Val	Leu	Glu	Arg	Ala	Arg	Glu	Ser	Gly	Ala	Glu	Arg	Ile	Ile	Val	Ala
		35					40					45			
Thr	Asp	His	Glu	Asp	Val	Ala	Arg	Ala	Val	Glu	Ala	Ala	Gly	Gly	Glu
	50					55					60				
Val	Cys	Met	Thr	Arg	Ala	Asp	His	Gln	Ser	Gly	Thr	Glu	Arg	Leu	Ala
65					70					75				80	
Glu	Val	Val	Glu	Lys	Cys	Ala	Phe	Ser	Asp	Asp	Thr	Val	Ile	Val	Asn
				85					90					95	

Val	Gln	Gly	Asp	Glu	Pro	Met	Ile	Pro	Ala	Thr	Ile	Ile	Arg	Gln	Val	100	105	110
Ala	Asp	Asn	Leu	Ala	Gln	Arg	Gln	Val	Gly	Met	Ala	Thr	Leu	Ala	Val	115	120	125
Pro	Ile	His	Asn	Ala	Glu	Glu	Ala	Phe	Asn	Pro	Asn	Ala	Val	Lys	Val	130	135	140
Val	Leu	Asp	Ala	Glu	Gly	Tyr	Ala	Leu	Tyr	Phe	Ser	Arg	Ala	Thr	Ile	145	150	155
Pro	Trp	Asp	Arg	Asp	Arg	Phe	Ala	Glu	Gly	Leu	Glu	Thr	Val	Gly	Asp	165	170	175
Asn	Phe	Leu	Arg	His	Leu	Gly	Ile	Tyr	Gly	Tyr	Arg	Ala	Gly	Phe	Ile	180	185	190
Arg	Arg	Tyr	Val	Asn	Trp	Gln	Pro	Ser	Pro	Leu	Glu	His	Ile	Glu	Met	195	200	205
Leu	Glu	Gln	Leu	Arg	Val	Leu	Trp	Tyr	Gly	Glu	Lys	Ile	His	Val	Ala	210	215	220
Val	Ala	Gln	Glu	Val	Pro	Gly	Thr	Gly	Val	Asp	Thr	Pro	Glu	Asp	Pro	225	230	235
Ser	Thr	Ala	Leu	Met	Lys	Ile	Pro	Gly	Asp	Pro	Gly	Gly	Gly	Asp	Met	245	250	255
Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	Tyr	Lys	Val	Val	Lys	Ile	260	265	270
Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	Ala	Lys	Arg	Arg	Val	Val	Gln	275	280	285
Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	290	295	300
Gly	Ala	Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	305	310	315
Gln	Ala	Arg	Gln	Leu	Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	325	330	335
Leu	Arg	Ala	Ile	Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	340	345	350
Gly	Ile	Lys	Gln	Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	355	360	365
Lys	Asp	Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	370	375	380
Cys	Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	385	390	395
Glu	Gln	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Asp	Arg	Glu	Ile	405	410	415
Asn	Asn	Tyr	Thr	Ser	Leu	Ile	His	Ser	Leu	Ile	Glu	Glu	Ser	Gln	Asn	420	425	430
Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	Trp	Val	435	440	445
Asn	Arg	Val	Arg	Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	450	455	460
Pro	Ile	Pro	Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Lys	Lys	Ala	465	470	475
Ala	Asn	Val	Thr	Val	Thr	Val	Pro	Phe	Val	Trp						485	490	

<210> 57

<211> 651

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-8PL

<400> 57

atgacgcggtg	gtgacatgaa	agacatctgg	cgtaacgaac	tgttcaaata	caaagttggt	60
cgtgtttaa	ac cgttctctgt	tgctccgacc	ccgatcgctc	gtccgggttat	cgggtactggc	120
acccaccgtg	aaaaacgtgc	tgtaggtctg	ggtatgctgt	tcctggg	cgt tctgtctgca	180
gcaggttcca	ctatgggtgc	tgcagctacc	gctctgaccg	tacagaccca	ctctgttatc	240
aaaggtatcg	tacagcagca	ggacaacctg	ctgctgca	tccaggcaca	gcaggaactg	300
ctgcgtctgt	ctgtatgggg	tatccgtcag	ctgctgctc	gtctgctggc	actggaaacc	360
ctgatccaga	accagcagct	gctgaacctg	tggggctgca	aaggctcgtct	gatctgctac	420
acctccgtta	aatggaacga	aacctggcgt	aacaccacca	acatcaacca	gatctgggggt	480
aacctgacct	ggcaggaatg	ggaccagcag	atcgacaacg	tttcttccac	catctacgaa	540
gaaatccaga	aagctcaggt	tcagcaggaa	cagaacgaaa	aaaaactgct	ggaactggac	600
gaatgggctt	ctctgtggaa	ctggctggac	atcaccaaat	ggctgtaata	g	651

<210> 58

<211> 215

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-8PL

<400> 58

Met	Ile	Gly	Gly	Asp	Met	Lys	Asp	Ile	Trp	Arg	Asn	Glu	Leu	Phe	Lys
1				5					10					15	
Tyr	Lys	Val	Val	Arg	Val	Lys	Pro	Phe	Ser	Val	Ala	Pro	Thr	Pro	Ile
			20					25					30		
Ala	Arg	Pro	Val	Ile	Gly	Thr	Gly	Thr	His	Arg	Glu	Lys	Arg	Ala	Val
			35				40					45			
Gly	Leu	Gly	Met	Leu	Phe	Leu	Gly	Val	Leu	Ser	Ala	Ala	Gly	Ser	Thr
			50				55				60				
Met	Gly	Ala	Ala	Ala	Thr	Ala	Leu	Thr	Val	Gln	Thr	His	Ser	Val	Ile
65					70				75					80	
Lys	Gly	Ile	Val	Gln	Gln	Asp	Asn	Leu	Leu	Arg	Ala	Ile	Gln	Ala	
				85				90					95		
Gln	Gln	Glu	Leu	Leu	Arg	Leu	Ser	Val	Trp	Gly	Ile	Arg	Gln	Leu	Arg
			100					105					110		
Ala	Arg	Leu	Leu	Ala	Leu	Glu	Thr	Leu	Ile	Gln	Asn	Gln	Gln	Leu	Leu
			115				120					125			
Asn	Leu	Trp	Gly	Cys	Lys	Gly	Arg	Leu	Ile	Cys	Tyr	Thr	Ser	Val	Lys
			130				135					140			
Trp	Asn	Glu	Thr	Trp	Arg	Asn	Thr	Thr	Asn	Ile	Asn	Gln	Ile	Trp	Gly
145					150				155					160	
Asn	Leu	Thr	Trp	Gln	Glu	Trp	Asp	Gln	Gln	Ile	Asp	Asn	Val	Ser	Ser
			165					170						175	
Thr	Ile	Tyr	Glu	Glu	Ile	Gln	Lys	Ala	Gln	Val	Gln	Gln	Glu	Gln	Asn
			180					185					190		
Glu	Lys	Lys	Leu	Leu	Glu	Leu	Asp	Glu	Trp	Ala	Ser	Leu	Trp	Asn	Trp
			195				200					205			
Leu	Asp	Ile	Thr	Lys	Trp	Leu									
			210				215								

<210> 59

<211> 1386

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-8CKS

<400> 59

atgagttttg	tggtcattat	tcccgcgcgc	tacgcgtcga	cgcgtctgcc	cggtaaacca	60
ttggttgata	ttaacggcaa	acccatgatt	gttcatgttc	ttgaacgcgc	gcgtgaatca	120
ggtgccgagc	gcatcatcgt	ggcaaccgat	catgaggatg	ttgcccgccg	cgttgaagcc	180
gctggcggtg	aagtatgtat	gacgcgcgcc	gatcatcagt	caggaacaga	acgtctggcg	240
gaagttgtcg	aaaaatgcgc	attcagcgac	gacacggtga	tcgttaatgt	gcagggtgat	300
gaaccgatga	tccctgcgac	aatcattcgt	caggttgtctg	ataacctcgc	tcagcgtcag	360
gtgggtatga	cgactctggc	ggtgccaatc	cacaatgcgg	aagaagcgtt	taaccggaat	420
gcggtgaaag	tggttctcga	cgtcgaagg	tatgcactgt	acttctctcg	cgccaccatt	480
ccttgggatc	gtgatcgttt	tgcagaaggc	cttgaaaccg	ttggcgataa	cttctcgcgt	540
catcttggtg	tttatggcta	ccgtgcaggc	tttatccgtc	gttacgtcaa	ctggcagcca	600
agtcggttag	aacacatcga	aatgttagag	cagcttcgtg	ttctgtggta	cggcgaaaaa	660
atccatgttg	ctggttgcct	ggaagttcct	ggcacagggtg	tggatacccc	tgaagatctc	720
gacccgtcga	cgaattctat	cgggtggtgac	atgaaagaca	tctggcgtaa	cgaactgttc	780
aaatacaaag	ttgttcgtgt	taaaccgttc	tctgttgctc	cgaccccgat	cgctcgtccg	840
gttatcggtg	ctggcaccca	ccgtgaaaaa	cgtgctgtag	gtctgggtat	gctgttcctg	900
ggcgttctgt	ctgcagcagg	ttccactatg	ggtgctgcag	ctaccgctct	gaccgtacag	960
accactctg	ttatcaaagg	tatcgtacag	cagcaggaca	acctgctgcg	tgcaatccag	1020
gcacagcagg	aactgctgcg	tctgtctgta	tggggtatcc	gtcagctgcg	tgctcgtctg	1080
ctggcactgg	aaaccctgat	ccagaaccag	cagctgctga	acctgtgggg	ctgcaaagg	1140
cgtctgatct	gctacacctc	cgttaaatgg	aacgaaacct	ggcgtaacac	caccaacatc	1200
aaccagatct	ggggtaacct	gacctggcag	gaatgggacc	agcagatcga	caacgtttct	1260
tccaccatct	acgaagaaat	ccagaaagct	caggttcagc	aggaacagaa	cgaaaaaaaa	1320
ctgctggaac	tggacgaatg	ggcttctctg	tggaaactggc	tggacatcac	caaattggctg	1380
taatag						1386

<210> 60

<211> 460

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-8CKS

<400> 60

Met	Ser	Phe	Val	Val	Ile	Ile	Pro	Ala	Arg	Tyr	Ala	Ser	Thr	Arg	Leu
1			5					10						15	
Pro	Gly	Lys	Pro	Leu	Val	Asp	Ile	Asn	Gly	Lys	Pro	Met	Ile	Val	His
			20					25					30		
Val	Leu	Glu	Arg	Ala	Arg	Glu	Ser	Gly	Ala	Glu	Arg	Ile	Ile	Val	Ala
		35					40					45			
Thr	Asp	His	Glu	Asp	Val	Ala	Arg	Ala	Val	Glu	Ala	Ala	Gly	Gly	Glu
	50					55					60				
Val	Cys	Met	Thr	Arg	Ala	Asp	His	Gln	Ser	Gly	Thr	Glu	Arg	Leu	Ala
65					70				75					80	
Glu	Val	Glu	Lys	Cys	Ala	Phe	Ser	Asp	Asp	Thr	Val	Ile	Val	Asn	Val
			85					90					95		
Val	Gln	Gly	Asp	Glu	Pro	Met	Ile	Pro	Ala	Thr	Ile	Ile	Arg	Gln	Val
		100						105					110		
Ala	Asp	Asn	Leu	Ala	Gln	Arg	Gln	Val	Gly	Met	Thr	Thr	Leu	Ala	Val
		115					120						125		

```

Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val
  130          135          140
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile
 145          150          155          160
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp
          165          170          175
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile
          180          185          190
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met
          195          200          205
Leu Glu Gln Leu Arg Val Leu Trp Tyr Gly Glu Lys Ile His Val Ala
  210          215          220
Val Ala Gln Glu Val Pro Gly Thr Gly Val Asp Thr Pro Glu Asp Leu
 225          230          235          240
Asp Pro Ser Thr Asn Ser Ile Gly Gly Asp Met Lys Asp Ile Trp Arg
          245          250          255
Asn Glu Leu Phe Lys Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val
          260          265          270
Ala Pro Thr Pro Ile Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg
          275          280          285
Glu Lys Arg Ala Val Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser
  290          295          300
Ala Ala Gly Ser Thr Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln
 305          310          315          320
Thr His Ser Val Ile Lys Gly Ile Val Gln Gln Gln Asp Asn Leu Leu
          325          330          335
Arg Ala Ile Gln Ala Gln Gln Glu Leu Arg Leu Ser Val Trp Gly
          340          345          350
Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln
          355          360          365
Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys
  370          375          380
Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile
 385          390          395          400
Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile
          405          410          415
Asp Asn Val Ser Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val
          420          425          430
Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala
          435          440          445
Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys Trp Leu
  450          455          460

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<210> 61
<211> 873
<212> PRT
<213> Human Immunodeficiency Virus

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<220>
<223> HIV-1 Group O isolate HAM112

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<400> 61
Met Ile Val Thr Met Arg Ala Met Gly Lys Arg Asn Arg Lys Leu Gly
  1          5          10          15
Ile Leu Tyr Ile Val Met Ala Leu Ile Pro Cys Leu Ser Ser Ser
          20          25          30
Gln Leu Tyr Ala Thr Val Tyr Ala Gly Val Pro Val Trp Glu Asp Ala

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		35					40					45				
Ala	Pro	Val	Leu	Phe	Cys	Ala	Ser	Asp	Ala	Asn	Leu	Thr	Ser	Thr	Glu	
	50					55				60						
Lys	His	Asn	Val	Trp	Ala	Ser	Gln	Ala	Cys	Val	Pro	Thr	Asp	Pro	Thr	
65					70				75						80	
Pro	His	Glu	Tyr	Leu	Leu	Thr	Asn	Val	Thr	Asp	Asn	Phe	Asn	Ile	Trp	
				85					90					95		
Glu	Asn	Tyr	Met	Val	Glu	Gln	Met	Gln	Glu	Asp	Ile	Ile	Ser	Leu	Trp	
			100					105					110			
Asp	Gln	Ser	Leu	Lys	Pro	Cys	Ile	Gln	Met	Thr	Phe	Met	Cys	Ile	Gln	
		115					120					125				
Met	Asn	Cys	Thr	Asp	Ile	Lys	Asn	Asn	Asn	Thr	Ser	Gly	Thr	Glu	Asn	
	130					135				140						
Arg	Thr	Ser	Ser	Ser	Glu	Asn	Pro	Met	Lys	Thr	Cys	Glu	Phe	Asn	Ile	
145					150					155					160	
Thr	Thr	Val	Leu	Lys	Asp	Lys	Lys	Glu	Lys	Lys	Gln	Ala	Leu	Phe	Tyr	
				165				170						175		
Val	Ser	Asp	Leu	Thr	Lys	Leu	Ala	Asp	Asn	Asn	Thr	Thr	Asn	Thr	Met	
			180					185					190			
Tyr	Thr	Leu	Ile	Asn	Cys	Asn	Ser	Thr	Thr	Ile	Lys	Gln	Ala	Cys	Pro	
		195					200					205				
Lys	Val	Ser	Phe	Glu	Pro	Ile	Pro	Ile	Tyr	Tyr	Cys	Ala	Pro	Ala	Gly	
	210					215					220					
Tyr	Ala	Ile	Phe	Lys	Cys	Asn	Ser	Ala	Glu	Phe	Asn	Gly	Thr	Gly	Lys	
225					230					235					240	
Cys	Ser	Asn	Ile	Ser	Val	Val	Thr	Cys	Thr	His	Gly	Ile	Lys	Pro	Thr	
				245					250					255		
Val	Ser	Thr	Gln	Leu	Ile	Leu	Asn	Gly	Thr	Leu	Ser	Lys	Glu	Lys	Ile	
			260					265					270			
Arg	Ile	Met	Gly	Lys	Asn	Ile	Ser	Asp	Ser	Gly	Lys	Asn	Ile	Ile	Val	
		275					280					285				
Thr	Leu	Ser	Ser	Asp	Ile	Glu	Ile	Thr	Cys	Val	Arg	Pro	Gly	Asn	Asn	
	290					295					300					
Gln	Thr	Val	Gln	Glu	Met	Lys	Ile	Gly	Pro	Met	Ala	Trp	Tyr	Ser	Met	
305					310					315					320	
Ala	Leu	Gly	Thr	Gly	Ser	Asn	Arg	Ser	Arg	Val	Ala	Tyr	Cys	Gln	Tyr	
				325					330					335		
Asn	Thr	Thr	Glu	Trp	Glu	Lys	Ala	Leu	Lys	Asn	Thr	Ala	Glu	Arg	Tyr	
			340					345					350			
Leu	Glu	Leu	Ile	Asn	Asn	Thr	Glu	Gly	Asn	Thr	Thr	Met	Ile	Phe	Asn	
		355					360					365				
Arg	Ser	Gln	Asp	Gly	Ser	Asp	Val	Glu	Val	Thr	His	Leu	His	Phe	Asn	
	370					375					380					
Cys	His	Gly	Glu	Phe	Phe	Tyr	Cys	Asn	Thr	Ser	Glu	Met	Phe	Asn	Tyr	
385					390					395						

Lys Pro Phe Ser Val Ala Pro Thr Pro Ile Ala Arg Pro Val Ile Gly
 500 505 510
 Thr Gly Thr His Arg Glu Lys Arg Ala Val Gly Leu Gly Met Leu Phe
 515 520 525
 Leu Gly Val Leu Ser Ala Ala Gly Ser Thr Met Gly Ala Ala Ala Thr
 530 535 540
 Ala Leu Thr Val Gln Thr His Ser Val Ile Lys Gly Ile Val Gln Gln
 545 550 555 560
 Gln Asp Asn Leu Leu Arg Ala Ile Gln Ala Gln Gln Glu Leu Leu Arg
 565 570 575
 Leu Ser Val Trp Gly Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala Leu
 580 585 590
 Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys Lys
 595 600 605
 Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp Arg
 610 615 620
 Asn Thr Thr Asn Ile Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln Glu
 625 630 635 640
 Trp Asp Gln Gln Ile Asp Asn Val Ser Ser Thr Ile Tyr Glu Glu Ile
 645 650 655
 Gln Lys Ala Gln Val Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu
 660 665 670
 Leu Asp Glu Trp Ala Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys Trp
 675 680 685
 Leu Trp Tyr Ile Lys Ile Ala Ile Ile Ile Val Gly Ala Leu Ile Gly
 690 695 700
 Val Arg Ile Val Met Ile Val Leu Asn Leu Val Arg Asn Ile Arg Gln
 705 710 715 720
 Gly Tyr Gln Pro Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser Glu
 725 730 735
 Ala Glu Thr Pro Gly Arg Thr Gly Glu Gly Gly Gly Asp Glu Gly Arg
 740 745 750
 Pro Arg Leu Ile Pro Ser Pro Gln Gly Phe Leu Pro Leu Leu Tyr Thr
 755 760 765
 Asp Leu Arg Thr Ile Ile Leu Trp Ser Tyr His Leu Leu Ser Asn Leu
 770 775 780
 Ile Ser Gly Thr Gln Thr Val Ile Ser His Leu Arg Leu Gly Leu Trp
 785 790 795 800
 Ile Leu Gly Gln Lys Ile Ile Asp Ala Cys Arg Ile Cys Ala Ala Val
 805 810 815
 Ile His Tyr Trp Leu Gln Glu Leu Gln Lys Ser Ala Thr Ser Leu Ile
 820 825 830
 Asp Thr Phe Ala Val Ala Val Ala Asn Trp Thr Asp Asp Ile Ile Leu
 835 840 845
 Gly Ile Gln Arg Leu Gly Arg Gly Ile Leu Asn Ile Pro Arg Arg Val
 850 855 860
 Arg Gln Gly Phe Glu Arg Ser Leu Leu
 865 870

<210> 62

<211> 20

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> HIV-1 Group O (env10R) PCR reverse primer

<400> 62	
yctytagaga gtgtccatt	20
<210> 63	
<211> 19	
<212> DNA	
<213> Human Immunodeficiency Virus	
<220>	
<223> HIV-1 Group O (env15R) PCR reverse primer	
<400> 63	
gtgctwcctg ctgcactta	19
<210> 64	
<211> 20	
<212> DNA	
<213> Human Immunodeficiency Virus	
<220>	
<223> HIV-1 Group O (env22R) PCR reverse primer	
<400> 64	
aagttgctca agaggtggta	20
<210> 65	
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<212> DNA	
<213> Human Immunodeficiency Virus	
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<223> HIV-1 Group O (env26R) PCR reverse primer	
<400> 65	
ccttagaggc acttgaggt	19
<210> 66	
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<212> DNA	
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<220>	
<223> HIV-1 Group O (env1F) PCR forward primer	
<400> 66	
ccaragcagt aagtaacgc	19
<210> 67	
<211> 23	
<212> DNA	
<213> Human Immunodeficiency Virus	
<220>	
<223> HIV-1 Group O (env7F) PCR forward primer	
<400> 67	
rttaaytaat tgtaactcca caa	23

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<210> 68
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env12F) PCR forward primer

<400> 68
gamtytatgc acctcccatc 20

<210> 69
<211> 21
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env19F) PCR forward primer

<400> 69
gacataacta aatggttg g 21

<210> 70
<211> 23
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env2F) PCR forward primer

<400> 70
atacttgara grttaagrag aat 23

<210> 71
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env9R) PCR reverse primer

<400> 71
atgccatgtg tacaagtaac 20

<210> 72
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env8F) PCR forward primer

<400> 72
atacactatt gtgctccarc 20

<210> 73

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<211> 22
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env14R) PCR reverse primer

<400> 73
agttctccat atatctttca tr                                     22

<210> 74
<211> 22
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env13F) PCR forward primer

<400> 74
aacataactg gaatgatyct ac                                     22

<210> 75
<211> 18
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env21R) PCR reverse primer

<400> 75
ctgagrtccg tgtacaac                                         18

<210> 76
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env20F) PCR forward primer

<400> 76
attaggcagg gatatcaacc                                       20

<210> 77
<211> 18
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env25R) PCR reverse primer

<400> 77
cctactccag gtgcrcat                                         18

<210> 78
<211> 19
<212> DNA

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<213> Human Immunodeficiency Virus
<220>
<223> HIV-1 Group O (env4F) PCR forward primer

<400> 78
cawcacaagc ctgygttcc 19

<210> 79
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env5R) PCR reverse primer

<400> 79
atgtcttcvt gcatttgktc 20

<210> 80
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env10F) PCR forward primer

<400> 80
aatgggacac tctctaragr 20

<210> 81
<211> 22
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env11F) PCR forward primer

<400> 81
ttaactgtca tggagaattc tt 22

<210> 82
<211> 22
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env11R) PCR reverse primer

<400> 82
aagaattctc catgacagtt aa 22

<210> 83
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

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<220>
<223> HIV-1 Group O (env15F) PCR forward primer

<400> 83
taagtgcagc aggwagcac 19

<210> 84
<211> 21
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env19R) PCR reverse primer

<400> 84
ccacaacat ttagttatgt c 21

<210> 85
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env22F) PCR forward primer

<400> 85
taccacctct tgagcaactt 20

<210> 86
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O (env24R) PCR reverse primer

<400> 86
cytgtctaatt yctycttgg 19

<210> 87
<211> 19
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> HIV-1 Group O PCR primer AG1

<400> 87
tggcctggta cagcatggg 19

<210> 88
<211> 32
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 3634

<400> 88
gtacgaattc catggaaggg gagttgacct gc 32

<210> 89
<211> 34
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR Primer 3636

<400> 89
tattggatcc ttatcagcta tttagttttt gtag 34

<210> 90
<211> 2214
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Nucleotide sequence of the coding region of
pGO-12CKS

<400> 90

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ttggttgata	ttaacggcaa	acccatgatt	gttcatgttc	ttgaacgcgc	gcgtgaatca	120
ggtgccgagc	gcatcatcgt	ggcaaccgat	catgaggatg	ttgcccgcgc	cgttgaagcc	180
gctggcggtg	aagtatgtat	gacgcgcgcc	gatcatcagt	caggaacaga	acgtctggcg	240
gaagttgtcg	aaaaatgcgc	attcagcgac	gacacggtga	tcgttaatgt	gcagggtgat	300
gaaccgatga	tccttgcgac	aatcatctgt	cagggttgctg	ataacctcgc	tcagcgtcag	360
gtgggtatgg	cgactctggc	ggtgccaatc	cacaatgcgg	aagaagcgtt	taaccgcaat	420
gcggtgaaag	tggttctcga	cgctgaaggg	tatgcactgt	acttctctcg	cgccaccatt	480
ccttgggatc	gtgatcgttt	tgcagaaggc	cttgaaaccg	ttggcgataa	cttctctcgt	540
catcttggtg	tttatggcta	ccgtgcaggc	tttatccgtc	gttacgtcaa	ctggcagcca	600
agtcggttag	aacacatcga	aatgttagag	cagcttctgtg	ttctgtggta	cggcgaaaaa	660
atccatggtg	ctgttgctca	ggaagttcct	ggcacagggtg	tggatacccc	tgaagatccg	720
tcgacagccc	ttatgaagat	ccccggcgac	ccgggtgggtg	gtgacatgcg	tgacaactgg	780
cgttctgaac	tgtacaaata	caaagttggt	aaaatcgaac	cgctgggtgt	tgctccgact	840
aaagctaaac	gtcgtgttgt	tcagcgtgaa	aaacgcgcgc	ttggtatcgg	tgactgttcc	900
ctgggtttcc	tgggtgctgc	tggttctacc	atgggtgctg	cttctatgac	cctgactgtt	960
caggcccgtc	agcttctgtc	tggtatcgtt	cagcagcaga	acaatctgct	gcgtgctatc	1020
gaagctcagc	agcatctgct	gcaactgacc	gtttggggta	tcaaacagct	tcaggctcgt	1080
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ggtaaactga	tctgcactac	tgtgtttccg	tggaaacgctt	cttgggtctaa	caaactctctg	1200
gaacagatct	ggaacaacat	gacttggatg	gaatgggacc	gtgaaatcaa	caactacaca	1260
agcttgatcc	actctctgat	cgaagaaagc	cagaaccagc	aggaaaaaaa	cgaacaggaa	1320
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cagacccatc	tgcgatccc	gcgtgggtccg	gaccgtccgg	aaggatcga	agaagaaggc	1440
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tggcgtaacg	aactgttcaa	atacaaagtt	gttcgtgtta	aaccgttctc	tgttgctccg	1560
accccgatcg	ctcgtccgggt	tatcgggtact	ggcaccacc	gtgaaaaacg	tgctgtaggt	1620
ctgggtatgc	tgttctctggg	cggttctgtct	gcagcagggtt	ccactatggg	tgctgcagct	1680
accgctctga	ccgtacagac	ccactctgtt	atcaaaggta	tcgtacagca	gcaggacaac	1740
ctgctgcgtg	caatccaggc	acagcaggaa	ctgctgcgtc	tgtctgtatg	gggtatccgt	1800
cagctgcgtg	ctcgtctgct	ggcactggaa	accctgatcc	agaaccagca	gctgctgaac	1860
ctgtggggct	gcaaaggctg	tctgatctgc	tacacctccg	ttaaatggaa	cgaaacctgg	1920

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cgtaacacca ccaacatcaa ccagatctgg ggtaacctga cctggcagga atgggaccag 1980
cagatcgaca acgtttcttc caccatctac gaagaaatcc agaaagctca ggttcagcag 2040
gaacagaacg aaaaaaaaaact gctggaactg gacgaatggg cttctctgtg gaactggctg 2100
gacatcacca aatggctgcg taacatccgt cagggctacc agccgctgtc cctgcagatc 2160
ccgacccgtc agcagtctga agctgaaact ccgggtcgta ccggtgaata atag 2214

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<210> 91
<211> 736
<212> PRT
<213> Human Immunodeficiency Virus

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<220>
<223> Encodes recombinant protein pGO-12CKS

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<400> 91
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1      5      10      15
Pro Gly Lys Pro Leu Val Asp Ile Asn Gly Lys Pro Met Ile Val His
20     25     30
Val Leu Glu Arg Ala Arg Glu Ser Gly Ala Glu Arg Ile Ile Val Ala
35     40     45
Thr Asp His Glu Asp Val Ala Arg Ala Val Glu Ala Ala Gly Gly Glu
50     55     60
Val Cys Met Thr Arg Ala Asp His Gln Ser Gly Thr Glu Arg Leu Ala
65     70     75     80
Glu Val Val Glu Lys Cys Ala Phe Ser Asp Asp Thr Val Ile Val Asn
85     90     95
Val Gln Gly Asp Glu Pro Met Ile Pro Ala Thr Ile Ile Arg Gln Val
100    105    110
Ala Asp Asn Leu Ala Gln Arg Gln Val Gly Met Ala Thr Leu Ala Val
115    120    125
Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val
130    135    140
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile
145    150    155    160
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp
165    170    175
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile
180    185    190
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met
195    200    205
Leu Glu Gln Leu Arg Val Leu Trp Tyr Gly Glu Lys Ile His Val Ala
210    215    220
Val Ala Gln Glu Val Pro Gly Thr Gly Val Asp Thr Pro Glu Asp Pro
225    230    235    240
Ser Thr Ala Leu Met Lys Ile Pro Gly Asp Pro Gly Gly Gly Asp Met
245    250    255
Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Ile
260    265    270
Glu Pro Leu Gly Val Ala Pro Thr Lys Ala Lys Arg Arg Val Val Gln
275    280    285
Arg Glu Lys Arg Ala Val Gly Ile Gly Ala Leu Phe Leu Gly Phe Leu
290    295    300
Gly Ala Ala Gly Ser Thr Met Gly Ala Ala Ser Met Thr Leu Thr Val
305    310    315    320
Gln Ala Arg Gln Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu
325    330    335

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Leu Arg Ala Ile Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp
      340                      345                      350
Gly Ile Lys Gln Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu
      355                      360                      365
Lys Asp Gln Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile
      370                      375                      380
Cys Thr Thr Ala Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu
      385                      390                      395                      400
Glu Gln Ile Trp Asn Asn Met Thr Trp Met Glu Trp Asp Arg Glu Ile
      405                      410                      415
Asn Asn Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn
      420                      425                      430
Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Val
      435                      440                      445
Asn Arg Val Arg Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr His Leu
      450                      455                      460
Pro Ile Pro Arg Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly
      465                      470                      475                      480
Gly Glu Arg Asp Arg Asp Arg Ser Ile Arg Leu Val Ile Gly Gly Asp
      485                      490                      495
Met Lys Asp Ile Trp Arg Asn Glu Leu Phe Lys Tyr Lys Val Val Arg
      500                      505                      510
Val Lys Pro Phe Ser Val Ala Pro Thr Pro Ile Ala Arg Pro Val Ile
      515                      520                      525
Gly Thr Gly Thr His Arg Glu Lys Arg Ala Val Gly Leu Gly Met Leu
      530                      535                      540
Phe Leu Gly Val Leu Ser Ala Ala Gly Ser Thr Met Gly Ala Ala Ala
      545                      550                      555                      560
Thr Ala Leu Thr Val Gln Thr His Ser Val Ile Lys Gly Ile Val Gln
      565                      570                      575
Gln Gln Asp Asn Leu Leu Arg Ala Ile Gln Ala Gln Gln Glu Leu Leu
      580                      585                      590
Arg Leu Ser Val Trp Gly Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala
      595                      600                      605
Leu Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys
      610                      615                      620
Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp
      625                      630                      635                      640
Arg Asn Thr Thr Asn Ile Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln
      645                      650                      655
Glu Trp Asp Gln Gln Ile Asp Asn Val Ser Ser Thr Ile Tyr Glu Glu
      660                      665                      670
Ile Gln Lys Ala Gln Val Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu
      675                      680                      685
Glu Leu Asp Glu Trp Ala Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys
      690                      695                      700
Trp Leu Arg Asn Ile Arg Gln Gly Tyr Gln Pro Leu Ser Leu Gln Ile
      705                      710                      715                      720
Pro Thr Arg Gln Gln Ser Glu Ala Glu Thr Pro Gly Arg Thr Gly Glu
      725                      730                      735

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<210> 92

<211> 2124

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-13CKS

<400> 92

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ggtgcccagc gcatcatcgt ggcaaccgat catgaggatg ttgcccgcgc cgttgaagcc      180
gctggcgggt aagtatgtat gacgcgcgcc gatcatcagt caggaacaga acgtctggcg      240
gaagttgtcg aaaaatgcgc attcagcgac gacacggtga tcgttaatgt gcagggtgat      300
gaaccgatga tccctgcgac aatcattcgt caggttgctg ataacctcgc tcagcgtcag      360
gtgggtatgg cgactctggc ggtgccaatc cacaatgcgg aagaagcgtt taaccggaat      420
gcggtgaaag tggttctcga cgctgaaggg tatgcactgt acttctctcg cgccaccatt      480
ccttgggata gtgatcgttt tgcagaaggc cttgaaaccg ttggcgataa cttcctgcgt      540
catcttggtt tttatggcta ccgtgcaggc tttatccgtc gttacgtcaa ctggcagcca      600
agtccggttag aacacatcga aatgttagag cagcttcgtg ttctgtggta cggcgaaaaa      660
atccatgttg ctggttgcga ggaagtccct ggcacaggtg tggatacccc tgaagatccg      720
tcgacagccc ttatgaagat ccccggcgac ccgggtgggt gtgacatgcg tgacaactgg      780
cgttctgaac tgtacaaata caaagtgtgt aaaatcgaac cgctgggtgt tgctccgact      840
aaagctaaac gtcgtgttgt tcagcgtgaa aaacgcgcgc ttggtatcgg tgcactgttc      900
ctgggtttcc tgggtgctgc tgggttctacc atgggtgctg cttctatgac cctgactgtt      960
caggcccgtc agcttctgtc tgggtatcgt cagcagcaga acaatctgct gcgtgctatc     1020
gaagctcagc agcatctgct gcaactgacc gtttggggta tcaaacagct tcaggctcgt     1080
atcctggctg ttgaacgtta cctgaaagac cagcagctgc tgggtatctg gggttgctct     1140
ggtaaactga tctgcactac tgctgttccg tggaaacgct cttggtctaa caaatctctg     1200
gaacagatct ggaacaacat gacttggatg gaatgggacc gtgaaatcaa caactacaca     1260
agcttgatcc actctctgat cgaagaaagc cagaaccagc aggaaaaaaa cgaacaggaa     1320
cttctagaac tggacaaatg ggtaaaccgt gttcgtcagg gttactctcc gctgtcttcc     1380
cagacccatc tgcgatccc gcgtgggtccg gaccgtccgg aaggatcga agaagaaggc     1440
ggcgaacgtg accgtgaccg ttccattcgt ctggtaatcg gtggtgacat gaaagacatc     1500
tggcgtaacg aactgttcaa atacaaagtt gttcgtgtta aaccgtttctc tgttgctccg     1560
accccgatcg ctgctccggt tatcggtaact ggcaccacc gtgaaaaacg tgctgtaggt     1620
ctgggtatgc tgttctctgg cgttctgtct gcagcaggtt ccactatggg tgctgcagct     1680
accgctctga ccgtacagac ccactctgtt atcaaaggta tcgtacagca gcaggacaac     1740
ctgctgcgtg caatccaggc acagcaggaa ctgctgcgtc tgtctgtatg gggtatccgt     1800
cagctgcgtg ctgctctgct ggcaactggaa accctgatcc agaaccagca gctgctgaac     1860
ctgtggggct gcaaaggctg tctgatctgc tacacctcgg ttaaatggaa cgaaacctgg     1920
cgtaacacca ccaacatcaa ccagatctgg ggtaacctga cctggcagga atgggaccag     1980
cagatcgaca acgtttcttc caccatctac gaagaaatcc agaaagctca ggttcagcag     2040
gaacagaacg aaaaaaaact gctggaactg gacgaatggg cttctctgtg gaactggctg     2100
gacatcacca aatggctgta atag                                     2124

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<210> 93

<211> 706

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-13CKS

<400> 93

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Pro Gly Lys Pro Leu Val Asp Ile Asn Gly Lys Pro Met Ile Val His
      20              25              30
Val Leu Glu Arg Ala Arg Glu Ser Gly Ala Glu Arg Ile Val Ala
      35              40              45
Thr Asp His Glu Asp Val Ala Arg Ala Val Glu Ala Ala Gly Gly Glu

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50		55		60
Val Cys Met Thr Arg	Ala Asp His Gln Ser Gly Thr Glu Arg Leu Ala			
65	70	75	80	
Glu Val Val Glu Lys Cys Ala Phe Ser Asp Asp Thr Val Ile Val Asn				
	85	90	95	
Val Gln Gly Asp Glu Pro Met Ile Pro Ala Thr Ile Ile Arg Gln Val				
	100	105	110	
Ala Asp Asn Leu Ala Gln Arg Gln Val Gly Met Ala Thr Leu Ala Val				
	115	120	125	
Pro Ile His Asn Ala Glu Glu Ala Phe Asn Pro Asn Ala Val Lys Val				
	130	135	140	
Val Leu Asp Ala Glu Gly Tyr Ala Leu Tyr Phe Ser Arg Ala Thr Ile				
145	150	155	160	
Pro Trp Asp Arg Asp Arg Phe Ala Glu Gly Leu Glu Thr Val Gly Asp				
	165	170	175	
Asn Phe Leu Arg His Leu Gly Ile Tyr Gly Tyr Arg Ala Gly Phe Ile				
	180	185	190	
Arg Arg Tyr Val Asn Trp Gln Pro Ser Pro Leu Glu His Ile Glu Met				
	195	200	205	
Leu Glu Gln Leu Arg Val Leu Trp Tyr Gly Glu Lys Ile His Val Ala				
	210	215	220	
Val Ala Gln Glu Val Pro Gly Thr Gly Val Asp Thr Pro Glu Asp Pro				
225	230	235	240	
Ser Thr Ala Leu Met Lys Ile Pro Gly Asp Pro Gly Gly Gly Asp Met				
	245	250	255	
Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Ile				
	260	265	270	
Glu Pro Leu Gly Val Ala Pro Thr Lys Ala Lys Arg Arg Val Val Gln				
	275	280	285	
Arg Glu Lys Arg Ala Val Gly Ile Gly Ala Leu Phe Leu Gly Phe Leu				
	290	295	300	
Gly Ala Ala Gly Ser Thr Met Gly Ala Ala Ser Met Thr Leu Thr Val				
305	310	315	320	
Gln Ala Arg Gln Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu				
	325	330	335	
Leu Arg Ala Ile Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp				
	340	345	350	
Gly Ile Lys Gln Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu				
	355	360	365	
Lys Asp Gln Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile				
	370	375	380	
Cys Thr Thr Ala Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu				
385	390	395	400	
Glu Gln Ile Trp Asn Asn Met Thr Trp Met Glu Trp Asp Arg Glu Ile				
	405	410	415	
Asn Asn Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn				
	420	425	430	
Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Val				
	435	440	445	
Asn Arg Val Arg Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr His Leu				
	450	455	460	
Pro Ile Pro Arg Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly				
465	470	475	480	
Gly Glu Arg Asp Arg Asp Arg Ser Ile Arg Leu Val Ile Gly Gly Asp				
	485	490	495	
Met Lys Asp Ile Trp Arg Asn Glu Leu Phe Lys Tyr Lys Val Val Arg				
	500	505	510	

Val	Lys	Pro	Phe	Ser	Val	Ala	Pro	Thr	Pro	Ile	Ala	Arg	Pro	Val	Ile
	515						520					525			
Gly	Thr	Gly	Thr	His	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	Gly	Met	Leu
	530					535					540				
Phe	Leu	Gly	Val	Leu	Ser	Ala	Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ala
545					550					555					560
Thr	Ala	Leu	Thr	Val	Gln	Thr	His	Ser	Val	Ile	Lys	Gly	Ile	Val	Gln
				565					570					575	
Gln	Gln	Asp	Asn	Leu	Leu	Arg	Ala	Ile	Gln	Ala	Gln	Gln	Glu	Leu	Leu
			580					585					590		
Arg	Leu	Ser	Val	Trp	Gly	Ile	Arg	Gln	Leu	Arg	Ala	Arg	Leu	Leu	Ala
		595					600					605			
Leu	Glu	Thr	Leu	Ile	Gln	Asn	Gln	Gln	Leu	Leu	Asn	Leu	Trp	Gly	Cys
	610					615					620				
Lys	Gly	Arg	Leu	Ile	Cys	Tyr	Thr	Ser	Val	Lys	Trp	Asn	Glu	Thr	Trp
625					630					635					640
Arg	Asn	Thr	Thr	Asn	Ile	Asn	Gln	Ile	Trp	Gly	Asn	Leu	Thr	Trp	Gln
				645					650					655	
Glu	Trp	Asp	Gln	Gln	Ile	Asp	Asn	Val	Ser	Ser	Thr	Ile	Tyr	Glu	Glu
			660					665					670		
Ile	Gln	Lys	Ala	Gln	Val	Gln	Gln	Glu	Gln	Asn	Glu	Lys	Lys	Leu	Leu
		675					680					685			
Glu	Leu	Asp	Glu	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Leu	Asp	Ile	Thr	Lys
	690					695					700				
Trp	Leu														
705															

<210> 94
 <211> 1470
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Nucleotide sequence of the coding region of
 pGO-14pL

<400> 94	
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cgtgttaaacc cgttctctgt tgctccgacc ccgatcgctc gtccgggttat cgggtactggc	120
accacccgtg aaaaacgtgc tgtaggtctg ggtatgctgt tcttgggcgt tctgtctgca	180
gcaggttcca ctatgggtgc tgcagctacc gctctgaccg tacagaccca ctctgttatc	240
aaaggtatcg tacagcagca ggacaacctg ctgcgtgcaa tccaggcaca gcaggaaactg	300
ctgcgtctgt ctgtatgggg tatccgtcag ctgcgtgctc gtctgctggc actggaaacc	360
ctgatccaga accagcagct gctgaacctg tggggctgca aaggctcgtc gatctgctac	420
acctccgtta aatggaacga aacctggcgt aacaccacca acatcaacca gatctggggt	480
aacctgacct ggcaggaaatg ggaccagcag atcgacaacg tttcttcac catctacgaa	540
gaaatccaga aagctcaggt tcagcaggaa cagaacgaaa aaaaactgct ggaactggac	600
gaatgggctt ctctgtggaa ctggctggac atcaccaaat ggctgcgtaa catccgtcag	660
ggctaaccagc cgtctgtccct gcagatcccg acccgtcagc agtctgaagc tgaaactccg	720
ggctcgtaccg gtgaaggctc ggggtgggtg gacatgcgtg acaactggcg ttctgaactg	780
tacaaataca aagttgttaa aatcgaaccg ctgggtgttg ctccgactaa agctaaacgt	840
cgtgttgttc agcgtgaaaa acgcgcctgt ggtatcggtg cactgttcct gggtttctctg	900
gggtgctgctg gttctaccat ggggtgctgct tctatgacct tgactgttca ggcccgtcag	960
cttctgtctg gtatcgttca gcagcagaac aatctgctgc gtgctatcga agctcagcag	1020
catctgctgc aactgacctg ttgggggtatc aggcctcgtat cctggctggt	1080
gaacgttacc tgaaagacca gcagctgctg ggtatctggg gttgctctgg taaactgatc	1140
tgcactactg ctgttccgtg gaacgcttct tgggtctaaca aatctctgga acagatctgg	1200

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aacaacatga cttggatgga atgggaccgt gaaatcaaca actacacaag cttgatccac 1260
tctctgatcg aagaaagcca gaaccagcag gaaaaaaacg aacaggaact tctagaactg 1320
gacaaatggg ttaaccgtgt tcgtcagggg tactctccgc tgtttttcca gacccatctg 1380
ccgatcccg cgtggtccgga ccgtccggaa ggtatcgaag aagaaggcgg cgaacgtgac 1440
cgtgaccgtt ccattcgtct ggtataatag                                     1470

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<210> 95
<211> 488
<212> PRT
<213> Human Immunodeficiency Virus

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<220>
<223> Encodes recombinant protein pGO-14PL

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<400> 95
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Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val Ala Pro Thr Pro Ile
      20           25           30
Ala Arg Pro Val Ile Gly Thr Gly Thr His Arg Glu Lys Arg Ala Val
      35           40           45
Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser Ala Ala Gly Ser Thr
      50           55           60
Met Gly Ala Ala Ala Thr Ala Leu Thr Val Gln Thr His Ser Val Ile
65           70           75           80
Lys Gly Ile Val Gln Gln Asp Asn Leu Arg Ala Ile Gln Ala
      85           90           95
Gln Gln Glu Leu Leu Arg Leu Ser Val Trp Gly Ile Arg Gln Leu Arg
      100          105          110
Ala Arg Leu Leu Ala Leu Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu
      115          120          125
Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys
      130          135          140
Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile Asn Gln Ile Trp Gly
145          150          155          160
Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile Asp Asn Val Ser Ser
      165          170          175
Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val Gln Gln Glu Gln Asn
      180          185          190
Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala Ser Leu Trp Asn Trp
      195          200          205
Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg Gln Gly Tyr Gln Pro
      210          215          220
Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser Glu Ala Glu Thr Pro
225          230          235          240
Gly Arg Thr Gly Glu Gly Pro Gly Gly Gly Asp Met Arg Asp Asn Trp
      245          250          255
Arg Ser Glu Leu Tyr Lys Tyr Lys Val Val Lys Ile Glu Pro Leu Gly
      260          265          270
Val Ala Pro Thr Lys Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg
      275          280          285
Ala Val Gly Ile Gly Ala Leu Phe Leu Gly Phe Leu Gly Ala Ala Gly
      290          295          300
Ser Thr Met Gly Ala Ala Ser Met Thr Leu Thr Val Gln Ala Arg Gln
305          310          315          320
Leu Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile
      325          330          335

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Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln
 340 345 350
 Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln Gln
 355 360 365
 Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala
 370 375 380
 Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Glu Gln Ile Trp
 385 390 395 400
 Asn Asn Met Thr Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr
 405 410 415
 Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys
 420 425 430
 Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Val Asn Arg Val Arg
 435 440 445
 Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr His Leu Pro Ile Pro Arg
 450 455 460
 Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly Glu Arg Asp
 465 470 475 480
 Arg Asp Arg Ser Ile Arg Leu Val
 485

<210> 96

<211> 1584

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGO-15CKS

<400> 96

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ggtgccgagc	gcatcatcgt	ggcaaccgat	catgaggatg	ttgcccgccg	cgttgaagcc	180
gctggcggtg	aagtatgtat	gacgcgcgcc	gatcatcagt	caggaacaga	acgtctggcg	240
gaagttgtcg	aaaaatgcgc	attcagcgac	gacacgggtga	tcgttaatgt	gcagggtgat	300
gaaccgatga	tccctgcgac	aatcattcgt	caggttgctg	ataacctcgc	tcagcgtcag	360
gtgggtatga	cgactctggc	ggtgccaatc	cacaatgcgg	aagaagcgtt	taaccggaat	420
gcggtgaaag	tggttctcga	cgctgaaggg	tatgcactgt	acttctctcg	cgccaccatt	480
ccttgggata	gtgatcgttt	tgcagaaggc	cttgaaaccg	ttggcgataa	cttctctcgt	540
catcttggtg	tttatggcta	ccgtgcaggc	tttatccgtc	gttacgtcaa	ctggcagcca	600
agtcggttag	aacacatcga	aatgttagag	cagcttcgtg	ttctgtggta	cggcgaaaaa	660
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gacccgtcga	cgaattctat	cggtggtgac	atgaaagaca	tctggcgtaa	cgaactgttc	780
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accactctg	ttatcaaagg	tatcgtacag	cagcaggaca	acctgctgcg	tgcaatccag	1020
gcacagcagg	aactgctgcg	tctgtctgta	tggggtatcc	gtcagctgcg	tgctcgtctg	1080
ctggcactgg	aaaccctgat	ccagaaccag	cagctgctga	acctgtgggg	ctgcaaaggt	1140
cgtctgatct	gctacacctc	cgtaaagtgg	aacgaaacct	ggcgtaacac	caccaacatc	1200
aaccagatct	ggggtaacct	gacctggcag	gaatgggacc	agcagatcga	caacgtttct	1260
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ctgctggaac	tggacgaatg	ggcttctctg	tggaaactggc	tggacatcac	caaatggctg	1380
cgtaacatcc	gtcagggtca	ccagccgctg	tccttcgcaga	tcccgaacctg	tcagcagctc	1440
gaagctgaaa	ctccgggtcg	taccggtgaa	ggtggcggtt	ctcgctgctg	ggctctggaa	1500
actctgattc	agaaccagca	actgcttaac	ctgtgggggtt	gcaaggggccg	cctgatttgc	1560

tacacttctg taaaatggta atag

1584

<210> 97

<211> 526

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGO-15CKS

<400> 97

Met	Ser	Phe	Val	Val	Ile	Ile	Pro	Ala	Arg	Tyr	Ala	Ser	Thr	Arg	Leu
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Pro	Gly	Lys	Pro	Leu	Val	Asp	Ile	Asn	Gly	Lys	Pro	Met	Ile	Val	His
			20					25					30		
Val	Leu	Glu	Arg	Ala	Arg	Glu	Ser	Gly	Ala	Glu	Arg	Ile	Ile	Val	Ala
		35					40					45			
Thr	Asp	His	Glu	Asp	Val	Ala	Arg	Ala	Val	Glu	Ala	Ala	Gly	Gly	Glu
	50					55					60				
Val	Cys	Met	Thr	Arg	Ala	Asp	His	Gln	Ser	Gly	Thr	Glu	Arg	Leu	Ala
65					70					75				80	
Glu	Val	Val	Glu	Lys	Cys	Ala	Phe	Ser	Asp	Asp	Thr	Val	Ile	Val	Asn
				85					90					95	
Val	Gln	Gly	Asp	Glu	Pro	Met	Ile	Pro	Ala	Thr	Ile	Ile	Arg	Gln	Val
			100					105					110		
Ala	Asp	Asn	Leu	Ala	Gln	Arg	Gln	Val	Gly	Met	Thr	Thr	Leu	Ala	Val
	115						120					125			
Pro	Ile	His	Asn	Ala	Glu	Glu	Ala	Phe	Asn	Pro	Asn	Ala	Val	Lys	Val
	130					135					140				
Val	Leu	Asp	Ala	Glu	Gly	Tyr	Ala	Leu	Tyr	Phe	Ser	Arg	Ala	Thr	Ile
145					150					155					160
Pro	Trp	Asp	Arg	Asp	Arg	Phe	Ala	Glu	Gly	Leu	Glu	Thr	Val	Gly	Asp
			165						170					175	
Asn	Phe	Leu	Arg	His	Leu	Gly	Ile	Tyr	Gly	Tyr	Arg	Ala	Gly	Phe	Ile
			180					185					190		
Arg	Arg	Tyr	Val	Asn	Trp	Gln	Pro	Ser	Pro	Leu	Glu	His	Ile	Glu	Met
		195					200					205			
Leu	Glu	Gln	Leu	Arg	Val	Leu	Trp	Tyr	Gly	Glu	Lys	Ile	His	Val	Ala
	210					215					220				
Val	Ala	Gln	Glu	Val	Pro	Gly	Thr	Gly	Val	Asp	Thr	Pro	Glu	Asp	Leu
225					230					235					240
Asp	Pro	Ser	Thr	Asn	Ser	Ile	Gly	Gly	Asp	Met	Lys	Asp	Ile	Trp	Arg
				245					250					255	
Asn	Glu	Leu	Phe	Lys	Tyr	Lys	Val	Val	Arg	Val	Lys	Pro	Phe	Ser	Val
			260					265					270		
Ala	Pro	Thr	Pro	Ile	Ala	Arg	Pro	Val	Ile	Gly	Thr	Gly	Thr	His	Arg
		275					280					285			
Glu	Lys	Arg	Ala	Val	Gly	Leu	Gly	Met	Leu	Phe	Leu	Gly	Val	Leu	Ser
	290					295					300				
Ala	Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ala	Thr	Ala	Leu	Thr	Val	Gln
305					310					315					320
Thr	His	Ser	Val	Ile	Lys	Gly	Ile	Val	Gln	Gln	Gln	Asp	Asn	Leu	Leu
				325					330					335	
Arg	Ala	Ile	Gln	Ala	Gln	Gln	Glu	Leu	Leu	Arg	Leu	Ser	Val	Trp	Gly
			340					345					350		
Ile	Arg	Gln	Leu	Arg	Ala	Arg	Leu	Leu	Ala	Leu	Glu	Thr	Leu	Ile	Gln
		355					360					365			

Asn Gln Gln Leu Leu Asn Leu Trp Gly Cys Lys Gly Arg Leu Ile Cys
 370 375 380
 Tyr Thr Ser Val Lys Trp Asn Glu Thr Trp Arg Asn Thr Thr Asn Ile
 385 390 395 400
 Asn Gln Ile Trp Gly Asn Leu Thr Trp Gln Glu Trp Asp Gln Gln Ile
 405 410 415
 Asp Asn Val Ser Ser Thr Ile Tyr Glu Glu Ile Gln Lys Ala Gln Val
 420 425 430
 Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu Leu Asp Glu Trp Ala
 435 440 445
 Ser Leu Trp Asn Trp Leu Asp Ile Thr Lys Trp Leu Arg Asn Ile Arg
 450 455 460
 Gln Gly Tyr Gln Pro Leu Ser Leu Gln Ile Pro Thr Arg Gln Gln Ser
 465 470 475 480
 Glu Ala Glu Thr Pro Gly Arg Thr Gly Glu Gly Gly Gly Ser Arg Leu
 485 490 495
 Leu Ala Leu Glu Thr Leu Ile Gln Asn Gln Gln Leu Leu Asn Leu Trp
 500 505 510
 Gly Cys Lys Gly Arg Leu Ile Cys Tyr Thr Ser Val Lys Trp
 515 520 525

<210> 98
 <211> 60
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (pTB319+A)

<400> 98
 gaccgtccgg aaggatcga agaagaaggc ggcgaacgtg accgtgaccg ttccattcgt 60

<210> 99
 <211> 53
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (pTB319+B)

<400> 99
 atggaacggt caccggtcacg ttgcgcgcct tcttcttcga taccttccgg acg 53

<210> 100
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Sequencing primer pTB-S4

<400> 100
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<210> 101
 <211> 20
 <212> DNA

<213> Human Immunodeficiency Virus
 <220>
 <223> Sequencing primer pTB-S7
 <400> 101
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 <210> 102
 <211> 19
 <212> DNA
 <213> Human Immunodeficiency Virus
 <220>
 <223> Sequencing primer pTB-S1
 <400> 102
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 <210> 103
 <211> 18
 <212> DNA
 <213> Human Immunodeficiency Virus
 <220>
 <223> Sequencing primer pTB-S2
 <400> 103
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 <210> 104
 <211> 19
 <212> DNA
 <213> Human Immunodeficiency Virus
 <220>
 <223> Sequencing primer pTB-S3
 <400> 104
 taccagacag aagctgacg 19
 <210> 105
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus
 <220>
 <223> Sequencing primer pTB-S5
 <400> 105
 cttcgatcag agagtggatc 20
 <210> 106
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>

<223> Sequencing primer pTB-S6

<400> 106

gacgatctgc gttctctgtg

20

<210> 107

<211> 1800

<212> DNA

<213> Human Immunodeficiency Virus

<220>

<223> Nucleotide sequence of the coding region of
pGM-1CKS

<400> 107

atgagttttg	tggtcattat	tcccgcgcgc	tacgcgtcga	cgcgtctgcc	cggtaaacca	60
ttggttgata	ttaacggcaa	acccatgatt	gttcatgttc	ttgaacgcgc	gcgtgaatca	120
ggtgccgagc	gcatacctgt	ggcaaccgat	catgaggatg	ttgccgcgc	cgttgaagcc	180
gctggcgggtg	aagtatgtat	gacgcgcgc	gatcatcagt	caggaacaga	acgtctggcg	240
gaagttgtcg	aaaaatgcgc	attcagcgac	gacacgggtga	tcgttaatgt	gcagggtgat	300
gaaccgatga	tccctgcgac	aatcattcgt	cagggttgcg	ataacctcgc	tcagcgtcag	360
gtgggtatgg	cgactctggc	ggtgccaatc	cacaatgcgg	aagaagcgtt	taaccggaat	420
gcggtgaaag	tggttctcga	cgctgaagg	tatgcactgt	acttctctcg	cgccaccatt	480
ccttgggatc	gtgatcggtt	tgcagaaggc	cttgaaaccg	ttggcgataa	cttctctcgt	540
catcttggtg	tttatggcta	ccgtgcaggc	tttatccgtc	gttacgtcaa	ctggcagcca	600
agtcctgttag	aacacatcga	aatgttagag	cagcttcgtg	ttctgtggta	cggcgaaaaa	660
atccatgttg	ctgttgctca	ggaagttcct	ggcacagggtg	tggatacccc	tgaagatccg	720
tcgacagccc	ttatgaagat	ccccggcgac	ccgggtgggtg	gtgacatgcg	tgacaactgg	780
cgttctgaac	tgtacaaata	caaagttggt	aaaatcgaac	cgctgggtgt	tgctccgact	840
aaagctaaac	gtcgtgttgt	tcagcgtgaa	aaacgcgcgc	ttggtatcgg	tgcactgttc	900
ctgggtttcc	tgggtgctgc	tggttctacc	atgggtgctg	cttctatgac	cctgactgtt	960
caggcccgtc	agcttctgtc	tggatatcgt	cagcagcaga	acaatctgct	gcgtgctatc	1020
gaagctcagc	agcatctgct	gcaactgacc	gtttggggta	tcaaacagct	tcaggctcgt	1080
atcctggctg	ttgaacgtta	cctgaaagac	cagcagctgc	tgggtatctg	gggttgctct	1140
ggtaaaactga	tctgcactac	tgctgttccg	tggaaacgctt	cttgggtctaa	caaactctctg	1200
gaacagatct	ggaacaacat	gacttggatg	gaatgggacc	gtgaaatcaa	caactacaca	1260
agcttgatcc	actctctgat	cgaagaaagc	cagaaccagc	aggaaaaaaa	cgaacaggaa	1320
cttctagaac	tggacaaatg	ggttaaccgt	gttcgtcagg	gttactctcc	gctgtctttc	1380
cagacccatc	tgcgcgatccc	gcgtgggtccg	gaccgtccgg	aaggatcga	agaagaaggc	1440
ggcgaacgtg	accgtgaccg	ttccattcgt	ctggtaaacc	gttctctggc	tctgatctgg	1500
gacgatctgc	gttctctgtg	cctgttctct	taccaccgtc	tgcgtgatct	gctgctgatc	1560
gtgactcgta	tcgttgaact	gctcggccgt	cgtgggtggg	aagctctgaa	atactgggtg	1620
aatctgcttc	agtactggtc	ccaggaactg	aaaaactctg	ctgtttctct	gctgaacgct	1680
actgctatcg	ctgttgctga	aggcaccgat	cgtgttatcg	aagtagttca	gggtgcttac	1740
cgtgctatcc	gtcacattcc	gcgtcgtatc	cgtcagggtc	tggaaacgtat	cctgctgtaa	1800

<210> 108

<211> 599

<212> PRT

<213> Human Immunodeficiency Virus

<220>

<223> Encodes recombinant protein pGM-1CKS

<400> 108

Met Ser Phe Val Val Ile Ile Pro Ala Arg Tyr Ala Ser Thr Arg Leu

1	5	10	15
Pro Gly Lys	Pro Leu Val Asp Ile	Asn Gly Lys Pro Met	Ile Val His
	20	25	30
Val Leu Glu Arg	Ala Arg Glu Ser	Gly Ala Glu Arg	Ile Ile Val Ala
	35	40	45
Thr Asp His Glu	Asp Val Ala Arg	Ala Val Glu Ala	Ala Gly Gly Glu
	50	55	60
Val Cys Met Thr	Arg Ala Asp His	Gln Ser Gly Thr	Glu Arg Leu Ala
65	70	75	80
Glu Val Val Glu	Lys Cys Ala Phe	Ser Asp Asp Thr	Val Ile Val Asn
	85	90	95
Val Gln Gly Asp	Glu Pro Met Ile	Pro Ala Thr Ile	Ile Arg Gln Val
	100	105	110
Ala Asp Asn Leu	Ala Gln Arg Gln	Val Gly Met Ala	Thr Leu Ala Val
	115	120	125
Pro Ile His Asn	Ala Glu Glu Ala	Phe Asn Pro Asn	Ala Val Lys Val
	130	135	140
Val Leu Asp Ala	Glu Gly Tyr Ala	Leu Tyr Phe Ser	Arg Ala Thr Ile
145	150	155	160
Pro Trp Asp Arg	Asp Arg Phe Ala	Glu Gly Leu Glu	Thr Val Gly Asp
	165	170	175
Asn Phe Leu Arg	His Leu Gly Ile	Tyr Gly Tyr Arg	Ala Gly Phe Ile
	180	185	190
Arg Arg Tyr Val	Asn Trp Gln Pro	Ser Pro Leu Glu	His Ile Glu Met
	195	200	205
Leu Glu Gln Leu	Arg Val Leu Trp	Tyr Gly Glu Lys	Ile His Val Ala
	210	215	220
Val Ala Gln Glu	Val Pro Gly Thr	Gly Val Asp Thr	Pro Glu Asp Pro
225	230	235	240
Ser Thr Ala Leu	Met Lys Ile Pro	Gly Asp Pro Gly	Gly Gly Asp Met
	245	250	255
Arg Asp Asn Trp	Arg Ser Glu Leu	Tyr Lys Tyr Lys	Val Val Lys Ile
	260	265	270
Glu Pro Leu Gly	Val Ala Pro Thr	Lys Ala Lys Arg	Arg Val Val Gln
	275	280	285
Arg Glu Lys Arg	Ala Val Gly Ile	Gly Ala Leu Phe	Leu Gly Phe Leu
	290	295	300
Gly Ala Ala Gly	Ser Thr Met Gly	Ala Ala Ser Met	Thr Leu Thr Val
305	310	315	320
Gln Ala Arg Gln	Leu Leu Ser Gly	Ile Val Gln Gln	Gln Asn Asn Leu
	325	330	335
Leu Arg Ala Ile	Glu Ala Gln Gln	His Leu Leu Gln	Leu Thr Val Trp
	340	345	350
Gly Ile Lys Gln	Leu Gln Ala Arg	Ile Leu Ala Val	Glu Arg Tyr Leu
	355	360	365
Lys Asp Gln Gln	Leu Leu Gly Ile	Trp Gly Cys Ser	Gly Lys Leu Ile
	370	375	380
Cys Thr Thr Ala	Val Pro Trp Asn	Ala Ser Trp Ser	Asn Lys Ser Leu
385	390	395	400
Glu Gln Ile Trp	Asn Asn Met Thr	Trp Met Glu Trp	Asp Arg Glu Ile
	405	410	415
Asn Asn Tyr Thr	Ser Leu Ile His	Ser Leu Ile Glu	Glu Ser Gln Asn
	420	425	430
Gln Gln Glu Lys	Asn Glu Gln Glu	Leu Leu Glu Leu	Asp Lys Trp Val
	435	440	445
Asn Arg Val Arg	Gln Gly Tyr Ser	Pro Leu Ser Phe	Gln Thr His Leu
450	455	460	

Pro Ile Pro Arg Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly
 465 470 475 480
 Gly Glu Arg Asp Arg Asp Arg Ser Ile Arg Leu Val Asn Gly Ser Leu
 485 490 495
 Ala Leu Ile Trp Asp Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr His
 500 505 510
 Arg Leu Arg Asp Leu Leu Leu Ile Val Thr Arg Ile Val Glu Leu Leu
 515 520 525
 Gly Arg Arg Gly Trp Glu Ala Leu Lys Tyr Trp Trp Asn Leu Leu Gln
 530 535 540
 Tyr Trp Ser Gln Glu Leu Lys Asn Ser Ala Val Ser Leu Leu Asn Ala
 545 550 555 560
 Thr Ala Ile Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val Val
 565 570 575
 Gln Gly Ala Tyr Arg Ala Ile Arg His Ile Pro Arg Arg Ile Arg Gln
 580 585 590
 Gly Leu Glu Arg Ile Leu Leu
 595

<210> 109
 <211> 47
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> PCR primer pTB/0-5'

<400> 109
 gactacttgt agccattcgt ctggtaatcg gtggtgacat gaaagac

47

<210> 110
 <211> 33
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Sequencing primer pGO-9/Kpn

<400> 110
 acaatgatgg tacctattat tcaccggtac gac

33

<210> 111
 <211> 18
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Sequencing primer 3962

<400> 111
 attggttgat attaacgg

18

<210> 112
 <211> 20
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
<223> Sequencing primer Syl20-S1

<400> 112
tcggtggtga catgaaagac 20

<210> 113
<211> 20
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Sequencing primer 3965

<400> 113
aaaataggcg tatcacgagg 20

<210> 114
<211> 40
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR primer pGO-8/Kpn

<400> 114
acaatgatgg tacctattac agccatttgg tgatgtccag 40

<210> 115
<211> 46
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR primer pTB/Age5'

<400> 115
taacgatcag ctaccggtga aggtccgggt ggtggtgaca tgcgtg 46

<210> 116
<211> 38
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> PCR primer pGO/B-3'

<400> 116
caagatggat cctattatac cagacgaatg gaacggtc 38

<210> 117
<211> 122
<212> DNA
<213> Human Immunodeficiency Virus

<220>
<223> Synthetic oligonucleotide (synIDR#2-A)

<400> 117
 ccggtgaagg tggcgggttct cgctgctgg ctctggaaac tctgattcag aaccagcaac 60
 tgcttaacct gtgggggtgc aagggccgcc tgatttgcta cacttctgta aaatggtaat 120
 ag 122

<210> 118
 <211> 122
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Synthetic oligonucleotide (synIDR#2-B)

<400> 118
 gatcctatta ccattttaca gaagtgtagc aaatcaggcg gcccttgcaa cccacaggt 60
 taagcagttg ctggttctga atcagagttt ccagagccag caggcgagaa ccgccacctt 120
 ca 122

<210> 119
 <211> 849
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> Nucleotide sequence of the coding region of
 pGO-15PL

<400> 119
 atgatcgggtg gtgacatgaa agacatctgg cgtaacgaac tgttcaaata caaagttggt 60
 cgtgttaaac cgttctctgt tgctccgacc ccgatcgctc gtccgggttat cgggtactggc 120
 acccaccgtg aaaaacgtgc tgtaggtctg ggtatgctgt tcttgggcgt tctgtctgca 180
 gcaggttcca ctatgggtgc tgcagctacc gctctgaccg tacagaccca ctctgttatc 240
 aaaggtatcg tacagcagca ggacaacctg ctgctgcaaa tccaggcaca gcaggaactg 300
 ctgctgtctgt ctgtatgggg tatccgtcag ctgctgtctc gtctgtctggc actggaaacc 360
 ctgatccaga accagcagct gctgaacctg tggggctgca aaggctcgtct gatctgtctac 420
 acctccgtta aatggaacga aacctggcgt aacaccacca acatcaacca gatctggggt 480
 aacctgacct ggcaggaatg ggaccagcag atcgacaacg tttcttccac catctacgaa 540
 gaaatccaga aagctcaggt tcagcaggaa cagaacgaaa aaaaactgct ggaactggac 600
 gaatgggctt ctctgtggaa ctggctggac atcaccaaat ggctgcgtaa catccgtcag 660
 ggctaccagc cgctgtccct gcagatcccg acccgtcagc agtctgaagc tgaaactccg 720
 ggtcgtaccg gtgaagggtg cggttctcgc ctgctggctc tggaaactct gattcagaac 780
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 tggtaatag 849

<210> 120
 <211> 281
 <212> PRT
 <213> Human Immunodeficiency Virus

<220>
 <223> Encodes recombinant protein pGO-15PL

<400> 120
 Met Ile Gly Gly Asp Met Lys Asp Ile Trp Arg Asn Glu Leu Phe Lys
 1 5 10 15
 Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val Ala Pro Thr Pro Ile

			20					25					30				
Ala	Arg	Pro	Val	Ile	Gly	Thr	Gly	Thr	His	Arg	Glu	Lys	Arg	Ala	Val		
		35					40					45					
Gly	Leu	Gly	Met	Leu	Phe	Leu	Gly	Val	Leu	Ser	Ala	Ala	Gly	Ser	Thr		
	50					55					60						
Met	Gly	Ala	Ala	Ala	Thr	Ala	Leu	Thr	Val	Gln	Thr	His	Ser	Val	Ile		
65					70				75						80		
Lys	Gly	Ile	Val	Gln	Gln	Asp	Asn	Leu	Arg	Ala	Ile	Gln	Ala				
			85				90						95				
Gln	Gln	Glu	Leu	Leu	Arg	Leu	Ser	Val	Trp	Gly	Ile	Arg	Gln	Leu	Arg		
		100					105						110				
Ala	Arg	Leu	Leu	Ala	Leu	Glu	Thr	Leu	Ile	Gln	Asn	Gln	Gln	Leu	Leu		
	115						120					125					
Asn	Leu	Trp	Gly	Cys	Lys	Gly	Arg	Leu	Ile	Cys	Tyr	Thr	Ser	Val	Lys		
	130					135					140						
Trp	Asn	Glu	Thr	Trp	Arg	Asn	Thr	Thr	Asn	Ile	Asn	Gln	Ile	Trp	Gly		
145					150				155						160		
Asn	Leu	Thr	Trp	Gln	Glu	Trp	Asp	Gln	Gln	Ile	Asp	Asn	Val	Ser	Ser		
			165				170						175				
Thr	Ile	Tyr	Glu	Glu	Ile	Gln	Lys	Ala	Gln	Val	Gln	Gln	Glu	Gln	Asn		
	180						185						190				
Glu	Lys	Lys	Leu	Leu	Glu	Leu	Asp	Glu	Trp	Ala	Ser	Leu	Trp	Asn	Trp		
	195						200					205					
Leu	Asp	Ile	Thr	Lys	Trp	Leu	Arg	Asn	Ile	Arg	Gln	Gly	Tyr	Gln	Pro		
	210					215					220						
Leu	Ser	Leu	Gln	Ile	Pro	Thr	Arg	Gln	Gln	Ser	Glu	Ala	Glu	Thr	Pro		
225					230					235					240		
Gly	Arg	Thr	Gly	Glu	Gly	Gly	Gly	Ser	Arg	Leu	Leu	Ala	Leu	Glu	Thr		
			245				250							255			
Leu	Ile	Gln	Asn	Gln	Gln	Leu	Leu	Asn	Leu	Trp	Gly	Cys	Lys	Gly	Arg		
		260					265						270				
Leu	Ile	Cys	Tyr	Thr	Ser	Val	Lys	Trp									
	275						280										

<210> 121
 <211> 22
 <212> DNA
 <213> Human Immunodeficiency Virus

<220>
 <223> PCR Primer 63168

<400> 121
 acgttcgccg ccttcttctt cg